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# A NEW SPECIES OF THE GENUS *Macrotermes* FROM SOUTHERN YUNNAN CHINA

## (Isoptera: Termitidae)

1-fig

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**Abstract** Only one trimorphic form species, *Macrotermes declivatus*, was discovered and described by the authors in southern Yunnan, China. It occurs in south subtropical area. Up till now, only two trimorphic form species of the genus *Macrotermes* was recorded in China.

**Key words** *Macrotermes declivatus*, New species, Trimorphus, Isoptera. Yunnan Province

In recent year, eighteen species of the genus *Macrotermes* have been recorded in China. Only one trimorphic form species, *M. trimorphus*, was described in Zhuang Autonomous Region of Guangxi, 1983, by Dr. Li Guixiang and Ping Zhengming.

In this year, another trimorphic form new species, *M. declivatus*, was discovered in southern Yunnan Province. It occurs in south subtropical area.

The type specimens of the new species are deposited in Kunming Institute of Zoology, the Chinese Academy of Sciences.

### *Macrotermes declivatus* Zhu, new species

Major soldier (Figs. 1, 4, 7, 10, 13):

Head reddish brown; anteclypeus white; labrum slightly reddish brown; antennae pale; mandibles black except dark reddish brown bases; pronotum brown; mesonotum and metanotum slightly lighter than pronotum; leg pale; abdomen light brown.

Head scantily hair; labrum with five bristles, arranged in rows along lateral margins; postmentum with two bristles on the lateral sides of anterior portion; pronotum

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very sparsely hairy, with two bristles on anterior margin, one on anterolateral corners and two on posterior margin; mesonotum with one bristle on each lateral side, anterolateral corners and posterior margin respectively; metanotum with four bristles on anterior margin, one bristle on each lateral side of anterolateral corners.

Head winnowing fan-shaped; narrower anteriorly; widest across posterior half, posterior margin slightly arched at middle; fontanelle small, circular, situated in anterior half to middle. Eyes minute and dot-like. Anteclypeus membranous. Labrum longer than wide; tip hyaline and arrowhead-like. Mandibles long, stout, tip incurved ; left mandible with serrulations; right mandible non serration. Postmentum long, lateral side bulging out at anterior portion, slightly parallel at middle and posterior margin. Antennae with 17 articles, the third longer than the second, the second shortest. Pronotum nearly twice as wide as long; anterior and posterior margin notched in middle; lateral lobes distinct, narrowly rounded. Mesonotum narrower than pronotum, lateral lobes angularly rounded. Metanotum narrower than mesonotum, lateral angles less prominent than those of mesonotum.

**Table 1 Measurements (in mm) of ten major soldiers of *Macrotermes declivatus* sp. nov.**

| | Range | Mean |
|---|---|---|
| Length of head to side base of mandibles | 4.61–4.92 | 4.73 |
| Width of head at side base of mandibles | 2.40–2.65 | 2.51 |
| Width of head at posterolateral ends of antennal carinae | 3.35–3.54 | 3.44 |
| Maximum width of head | 3.79–4.10 | 3.99 |
| Length of left mandible | 2.40–2.53 | 2.46 |
| Length of postmentum | 3.03–3.22 | 3.16 |
| Maximum width of postmentum | 1.07–1.07 | 1.07 |
| Minimum width of postmentum | 0.69–0.76 | 0.74 |
| length of pronotum | 1.14–1.39 | 1.29 |
| Width of pronotum | 2.40–2.71 | 2.55 |
| Width of mesonotum | 2.21–2.71 | 2.42 |
| Width of metanotum | 2.21–2.65 | 2.36 |

Middle soldier (Figs. 2, 5, 8, 11, 14):

Head slightly reddish brown; anteclypeus white; labrum reddish brown; antennae with brownish tinge; pronotum reddish brown; mesonotum and metanotum slightly lighter than pronotum; abdomen light reddish brown; legs pale.

Head with very few scattered bristles; labrum with a row of long bristles on each lateral side; pronotum with four bristles on anterior margin; pronotum, mesonotum and metanotum with one bristle on anterolateral corners respectively.

Head narrowed anteriorly; winnowing fan-shaped; widest a little below middle; posterior margin slightly convex; fontanelle minute, dot-like; Eyes small. Labrum longer than wide; tip hyaline, arrowhead-like. Mandibles stout, smaller than major soldier; tips incurved; left mandible with serrulations and crenulations; right mandible smooth. Postmentum elongate; slightly parallel at middle and posterior margin.

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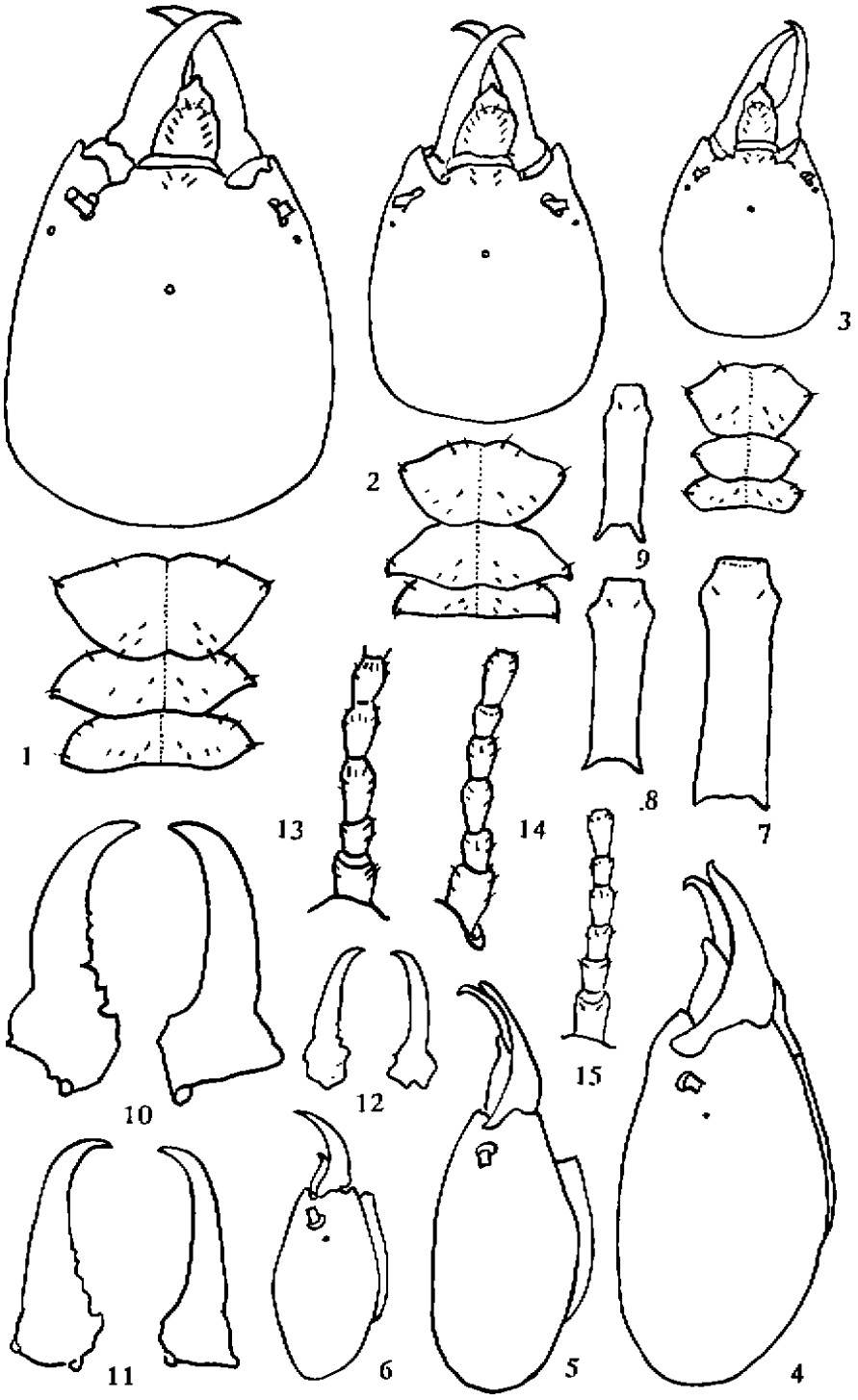


Figures 1–15 *Macrotermes declivatus* sp. nov. Major, middle and minor soldiers

1–3: Head, labrum, pronotum, mesonotum and metanotum from above.

4–6: Head from side. 7–9: Postmentum. 10–12: Mandibles. 13–15: Antennae.

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Antennae with 17 articles; the fifth shortest. Pronotum slightly notched anteriorly and posteriorly. Mesonotum wider than pronotum; Metanotum narrower than pronotum.

**Table 2 Measurements (in mm) of one middle soldier of *Macrotermes declivatus* sp. nov.**

| | |
|---|---|
| Length of head to side base of mandibles | 3.74 |
| Width of head at side base of mandibles | 1.83 |
| Width of head at posterolateral ends of antennal carinae | 2.59 |
| Maximum width of head | 2.90 |
| Length of left mandible | 1.96 |
| Length of postmentum | 2.46 |
| Maximum width of postmentum | 0.88 |
| Minimum width of postmentum | 0.63 |
| Length of pronotum | 1.70 |
| Width of pronotum | 2.08 |
| Width of mesonotum | 2.15 |
| Width of metanotum | 2.02 |

Minor soldier (Figs. 3, 6, 9, 12, 15):

Body size and colour smaller and lighter than those of major and middle soldiers. Labrum with a row of four bristles on each lateral side.

Head narrower anteriorly; widest a little below middle; fontanelle and eyes smaller. Mandibles long, slender, tips incurved and pointed; left mandible with serrulations and crenulations; right mandible with a spine at base. Antennae with 17 articles; the fifth shortest. Pronotum widest and mesonotum narrowest among the three tergites.

**Table 3 Measurements (in mm) of eight minor soldiers of *Macrotermes declivatus* sp. nov.**

| | Range | Mean |
|---|---|---|
| Length of head to side base of mandibles | 2.46–2.65 | 2.56 |
| Width of head at side base of mandibles | 1.26–1.33 | 1.26 |
| Width of head at posterolateral ends of antennal carinae | 1.77–1.96 | 1.86 |
| Maxiumu width of head | 1.96–2.21 | 2.06 |
| Length of left mandible | 1.64–1.77 | 1.73 |
| Length of postmentum | 1.64–1.89 | 1.77 |
| Maximum width of postmentum | 0.63–0.76 | 0.69 |
| Minimum width of postmentum | 0.51–0.57 | 0.55 |
| Length of pronotum | 0.82–0.88 | 0.86 |
| Width of pronotum | 1.39–1.52 | 1.44 |
| Width of mesonotum | 1.07–1.20 | 1.14 |
| Width of metanotum | 1.26–1.39 | 1.32 |

Comparisons:

This new species resembles *M. trimorphus* Li *et* Ping, but differs from it by the following characters: 1. Body size larger; 2. head winnowing fan-shaped, width of head at side base of mandibles much narrower; 3. tip of labrum arrowhead-like; 4. lateral side of postmentum bulging out at anterior portion; 5. right mandible of minor soldier with a spine at base.

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Collected from Jinggu County, Yunnan Province (23°30′ N latitude, 100°40′ E longitude), 850–900 m a. s. l.; 6 Feb., 1994. Zhang Yanhong leg., dug out from underground of pine trees. Specimen No. 94Ⅱ6001.

**Table 4 Measurements (in mm) of trimorphic form of workers of *Macrotermes declivatus* sp. nov.**

| | Major(10) | Middle (10) | Minor (7) |
|---|---|---|---|
| Length of body | 7.70–8.40 (8.02) | 5.68–6.25 (5.99) | 4.36–5.74 (5.21) |
| Length of head to tip of labrum | 2.59–2.84 (2.73) | 1.70–1.83 (1.77) | 1.64–1.77 (1.70) |
| Maximum width of head | 2.21–2.34 (2.29) | 1.39–1.45 (1.43) | 1.33–1.39 (1.38) |
| Width of pronotum | 1.20–1.33 (1.26) | 0.88–0.95 (0.90) | 0.82–0.95 (0.88) |
| Width of mesonotum | 1.01–1.14 (1.08) | 0.79–0.88 (0.81) | 0.76–0.88 (0.82) |
| Width of metanotum | 1.39–1.45 (1.41) | 1.07–1.20 (1.13) | 1.07–1.20 (1.14) |

Type specimens: Major soldier (holotype, paratypes), middle soldier (morphotype), minor soldier (morphotype, paramorphotypes), workers (trimorphus).

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# 云南大白蚁属一新种

## (等翅目：白蚁科)

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**摘要** 我国已知大白蚁属18种，其中仅1种属于大、中、小(兵蚁、工蚁)三态类型，由李桂祥、平正明定名为三型大白蚁(*Macrotermes trimorphus*)。作者等于1994年，在云南省南亚热带地区，发现另一三态类型大白蚁，定名为箕头大白蚁(*Macrotermes declivatus*)新种。

**关键词** 箕头大白蚁，新种，三形，等翅目，云南省 大白蚁属，白蚁科